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WHAT KINDS OF OCCUPATIONAL INFORMATION DO STUDENTS NEED.

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DESCRIPTORS- *STUDENT NEEDS, *OCCUPATIONAL INFORMATION, *OCCUPATIONAL GUIDANCE, PROGRAM PLANNING,

RESULTS OF STUDIES SUGGEST THAT STUDENTS NOT ONLY NEED OCCUPATIONAL INFORMATION, THEY NEED MORE AND BETTER INFORMATION TO SUPPORT THEIR OBJECTIVES OF CAREER CHOICE, CAREER PLANNING AND DEVELOPMENT, AND DEVELOPMENT AND APPLICATION OF VOCATIONAL CAPABILITIES. A PROPOSED COMPREHENSIVE STRUCTURE FOR NEEDED OCCUPATIONAL INFORMATION IS BASED ON A CONTINUUM WHICH REACHES BACKWARD IN TIME FROM A SKILLED WORKER ON THE JOB TOWARD THE CRADLE. IT ENCOMPASSES THE STAGES (1) JOURNEYMAN CAPABILITY WHICH NEEDS KNOWLEDGE ABOUT THE TASKS AND CONTEXTS WHICH DEFINE THE JOB AS WELL AS PRACTICE IN REALISTIC APPLICATIONS, (2) NEOPHYTE CAPABILITY WHICH NEEDS PRACTICE ON SELECTED TASKS OR PARTIAL TASKS SEQUENCES WITH EXTRAPOLATION AND GENERALIZATION TO THE FULLER JOB CONTEXT, (3) GENERAL VOCATIONAL CAPABILITY WHICH INCLUDES GENERAL PREPARATION FOR LATER SPECIFIC VOCATIONAL TRAINING, AND A CONTINUAL FEEDBACK OF REALITY-TESTING INFORMATION ABOUT TENTATIVE CAREER CHOICES AND PLANS, (4) CAREER PLANNING CAPABILITY WHICH REQUIRES SOME KIND OF STRUCTURE OR MAP POINTING OUT VARIETIES OF JOBS, STUDENT SELF-INFORMATION, AND STUDENT APPLICATION OF INFORMATION, AND (5) VOCATIONAL AWARENESS WHICH NEEDS AN IDENTIFICATION OF THE COMPONENTS AND INSTITUTIONS OF A WORKING SOCIETY AND THE ECONOMIC, POLITICAL, AND PHILOSOPHICAL LINES WHICH GOVERN THEM, A CLARIFICATION OF HOW WORK-ROLES GROW OUT OF THESE INSTITUTIONAL ROLES, AND A MEANINGFUL CONCEPT OF THE WORKING WORLD AS AN EVOLUTIONARY RATHER THAN A STATIC SYSTEM. A BIBLIOGRAPHY IS INCLUDED. THIS SPEECH WAS TO BE DELIVERED AT THE OCCUPATIONAL INFORMATION AND VOCATIONAL GUIDANCE CONFERENCE (PITTSBURGH, MARCH 11-13, 1966). (PS)

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Need

Let us focus for a moment on student need. Project TALENT results reveal that only about 19 per cent of the males and 27 per cent of the females reported the same career choice one year after high school graduation as they reported in the ninth grade (Flanagan, 1965). Yet, between 50 and 60 per cent of the high school seniors in the TALENT sample in 1965 reported that they had not discussed college or career plans with a school counselor during the previous year (U. S. Department of Health, Education, and Welfare, 1965). Another recent study (Eninger, 1965) has indicated that only about half of the graduates of high school trade and industry programs report going into a highly related occupation.

Rosen (1966) has pointed out that in the 1964-1965 school year, 44.3 per cent of the enrollees in federally aided vocational education programs were studying home economics and 18.8 per cent were studying agriculture "in the most highly industrialized nation in the world." He further has pointed out that between 1960 and 1964, employment in agriculture declined 16.8 per cent from 5.7 million to 4.8 million in the United States. During this same period, vocational agriculture enrollment rose 8.1 per cent from 796,200 to 860,600.

In a recent study by the American Institutes for Research (so recent, that there has not yet been public release of the report), a comprehensive evaluation was made of the educational program for a suburban school system in the Northeast. This system was superior on a number of indices, including a high ratio of counselors to students. Yet, when 1960 graduates were

asked five years after graduation to indicate things they wished had been more helpful to them, more than a third wished the school would have provided more information about occupations, more information relating interests and preferences to careers, more assistance in choosing a career, greater assistance in making application for further education, and more information about colleges and universities. More than 40 per cent wished they would have had more helpful information relating aptitudes and abilities to careers. Thirty-five per cent reported they were sorry they had made a specific decision. Nearly two-thirds of the regretted decisions related to preparing for the wrong kind of work or not entering college.

All of this suggests to me that students not only need occupational information, they need more and better information than has been available to them in the past.

Objectives

Our brief review of some of the empirical data relating to student needs has already suggested certain student objectives which occupation information can help to support. In general, we would see these objectives as being of three basic types:

1. Career choice which matches abilities and motives of the student and which fits realistically into the pattern of local and national needs.

2. Career planning and development which follows some coherent course and which avoids unnecessary regretted decisions and wasted potential.

3. <u>Development and application of vocational capabilities</u> from earlier stages of learning to more advanced and specific vocational training and from school situations to work contexts.

General Systems of Knowledge

It would be presumptuous to imagine that we can review here even a small representative sample of current thinking concerning the total domain of educable knowledge. Nevertheless, it may serve us well to glance briefly into this general education domain, no matter how narrowly tunneled our view may be.

Phenix (1964) has defined realms of meaning as a basis for a philosophy of curriculum for general education. It would, perhaps, be instructive to identify his six realms and explore briefly what implications each may have for occupational information in the school. The first realm is <u>symbolics</u> which includes ordinary languages, mathematics, and nondiscursive symbolic forms such as those used in the arts to express feelings and values. Not only do jobs increasingly have symbols and symbol systems as their principal content, both quantitative and word languages form the communications and instructions which cement most work contexts.

The second realm is <u>empirics</u> which includes all of the sciences. Increasingly, occupational content and practice are based on the findings of science and the structure of their related technologies. The third realm is <u>esthetics</u> which includes music, the visual arts, the arts of movement, and literature. Except to the extent that persons are employed in these fields, the esthetic realm may have limited direct relevance to occupational information in the school. However, Macdonald (1966) has called for consideration of an esthetic frame of reference in presenting the beauty, wonder, and potentialities of a working world.

The fourth realm is synnoetics, the realm of personal knowledge. In our discussion of needs and objectives, we have already alluded to the importance of relating self-knowledge to occupational knowledge for effective career decision making. The fifth realm is that of ethics or moral knowledge. Business and job ethics may be somewhat pretentious terms, but there is little arguing the relevance of rules of conduct, both implicit and explicit, to every job situation. The sixth realm is synoptics, including the fields of history, religion, and philosophy which integrate the other realms. Both historic and philosophic bases for job-producing institutions can help to strengthen the web of understanding with which the student views the working world.

Tykociner (1964) has organized knowledge in a way not too dissimilar to Phenix, although his emphasis is on zetetics--the science of research and artistic creation. He emphasizes three broad principles having relevance to occupational information for students. His first principle is that of the interdependence of knowledge. If occupational insularity ever did have validity, it is certainly no longer appropriate. His second principle is that of transformation--knowledge is continually evolving. Increasingly, evolution of occupations and their requisite knowledge is characteristic of occupations. His third principle is that of controllability of the future. One of the outstanding occupational trends in the past few decades, and an almost-certain one to continue into the future, is an increased devotion to creating the future. Indeed, whole corporate bodies have been set up with the purpose of planning the future (Aller, 1966).

The Industrial Arts Curriculum Project at Ohio State University is currently emphasizing praxiology--the knowledge of man's practices--in its efforts to define a new industrial arts curriculum (Ray, 1966). Subject matter is being drawn from analysis of practices in industry--that element of the economic institution which produces manufactured and constructed goods.

A Structure for Occupational Information

Given a statement of student needs for occupational information, general objectives for students' use of this information, and some of the approaches to structuring knowledge; we still lack a comprehensive structure for needed occupational information. Let me propose the beginnings of such a structure. First, let us imagine a continuum which reaches back in time from a skilled worker on the job to, or at least toward, the cradle. We might think of this continuum as encompassing a minimum of five general, and sometimes overlapping, stages. These stages may be characterized by the powers or capabilities the individual can be expected to possess at a given stage and by the kinds of occupational information which serve in the establishment of these capabilities. Working backward in time, we may talk about "journeyman capability," "neophyte capability," "general vocational capability," "career planning capability," and "vocational awareness."

Journeyman Capability

Journeyman capability may be characterized by individual responsibility, self-direction and initiation, ability to define appropriate sequences of tasks as well as competence to perform the individual tasks required in his job. He is generally expected to deal with contingencies and deal with new problems as they may arise. He is also likely to be expected to help others who are less skilled than he in performance of some of the more difficult tasks. None of this is to imply that the journeyman has necessarily reached some static end state, for he may have continuing opportunity for renewal and growth.

But, if the journeyman's performance is characterized by competence in meeting the requirements of the job, how did he get that way? In all probability, he most immediately gained this broad competence through

repeated practice on tne tasks which comprise his job. Where his job involves a great variety of contingencies and any single contingency may occur very infrequently, he has probably rehearsed and practiced contingencies representing the various classes or types with which he must deal. Where he must solve new problems, he has probably had a great deal of practice in applying a variety of techniques which have been useful in solving similar past problems.

Occupational information for the journeyman, then, is not only knowledge about the tasks and contexts which define his job, it is repeated practice in its realistic application.

Neophyte Capability

In contrast to the journeyman, the neophyte may have limited and spotty competence. He may perform some tasks very well and not be able to perform others at all. He is likely to have a journeyman or supervisor to whom he is to go when contingencies arise or for instruction on how to perform additional tasks. He may be closely monitored and expected to make relatively frequent mistakes.

The neophyte may acquire most of his initial job capability through specific vocational education in high school, in technical and commercial schools, or in a professional school. In other cases, the neophyte may acquire most of his initial job competence through post-employment, formal, or on-the-job training.

In either case, the initial job capability is likely to come most directly from practice on selected tasks and on partial task sequences. Frequently, the practice will be on simulated rather than actual tasks. Contingencies that are practiced may be highly selected and simplified. Continual reference may be made to more general bodies of knowledge having specialized application to the job. Training may be relatively non-specific in the sense of dealing with broad families of jobs rather than a single defined job.

Occupational information for the neophyte, then, is likely to be practice on selected tasks or partial task sequences with extrapolation and generalization to the fuller job context.

General Vocational Capability

Development of entry-level capability in a particular job can probably be facilitated by mastery of the rudimentary skills and knowledges which are applicable to a variety of jobs. Recent work (Altman, in press) has suggested that it is possible to define a domain of general vocational capability which has a rather high degree of structure. An initial approximation suggests that the fundamental dimension defining similarity and difference of general vocational capabilities is one which runs from hardware to interpersonal relationships at the extremes. Running from the hardware end to the interpersonal relations end, we might, at the most general level, encounter such terms as mechanical, electrical, structural-spatial, chemical-physical, biological, numerical symbols, verbal symbols, and human relations.

There seems to be a rather strong tendency for knowledge close on this continuum to be more strongly associated in the repertory of a given student than knowledge which would be widely separated on such a continuum. The major content of different jobs seems to cluster within limited regions of such a continuum. This suggests that meaningful associations can be made between a rather general domain of knowledge and initial differentiation of occupations.

Not only is there differentiation of occupations by content, of course, there is also differentiation by level. However, it is also possible to structure knowledges and skills, for any given segment of the hardware-people continuum, according to the complexity of the psychological processes involved (Altman, 1966). Consequently, there seems to be reasonable hope that one can begin rather a precise differentiation of occupational experience at the public school level. That is, the student can begin to learn not only

what job contents he finds compatible but also the levels of complexity with which he can deal most effectively.

Occupational information at the general vocational capability level, then, is not simply preparation in a general way for more specific vocational training at some future point in time. It is also the continual feeding back to the student of reality-testing information about his tentative career choices and plans.

Career Planning Capability

Beyond the reality testing, a student may obtain from attempts to master a domain of general vocational skills and knowledge, what occupational information may he need for effective career choice and planning? I have gone into this question in some detail elsewhere (Altman, 1965) and will limit my remarks here to pointing out some of the general information requirements. First, students need some kind of structure or map which will help the student to find out what varieties of jobs may be worthy of his consideration. It is gratuitous to think that volumes of relatively undifferentiated job descriptions constitute useful information for most students. Files of job data are likely to become useful information only when they are structured according to ways in which the student has learned to think about the working world.

Second, students need information about themselves--in relation to occupational alternatives. We have already touched upon the opportunity afforded by general vocational capabilities training for the student to develop increasing awareness of his occupational capabilities and limitations. In addition, the student may profit from information about his basic aptitudes and motivational tendencies as they relate to occupational success and satisfaction.

Third, the student needs to put his occupational knowledge into practice. He needs to learn how to put job and self-knowledge together on his own rather than being enslaved forever to others' interpretations. He needs to know what an educational plan is, how it developed and modified to meet changing circumstances, and how it relates to an occupational career, and at some point, he needs to know how to secure a job which will appropriately pay off his years of experimentation, planning, and preparation.

Vocational Awareness

But what is the wellspring from which all of this occupational information draws meaning? If we want the student to follow an orderly and rational path in preparing for a career, does this not mean that he will require rather early a vocational awareness--a matrix of concepts and principles that will support a progressive differentiation and explication of occupational information. I think so. It is not that children lack varied experience with the working world. Increasingly, they live in an artificial environment which is designed, operated, and maintained by man in his various occupational roles. But the child's view of this world is biased and fragmentary.

It would seem to me, then, that the task for designers of the earliest occupational information given to students is to superimpose a model of the working world as a functional system upon these fragmentary observations. The components and institutions of a working society need to be identified. The economic, political, and philosophical lines which hold these institutions need to be identified. How work roles grow out of these institutional roles needs to be clarified. Finally, the working world as an evolutionary rather than a static system needs to be made meaningful to the student.

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